IN THE SPECIFICATION:

On page 7 of the English language translation of the specification, please amend the first heading of the specification to appear as follows:

~~Description~~ Technical Field

On page 7 and continuing on page 8 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

The invention relates to constant velocity joints in the form of fixed joints ~~with the following characteristics:~~ having an outer joint part ~~which comprises~~ with a longitudinal axis L12 as well as an attaching end and an aperture end positioned axially opposite one another, and which is provided with outer ball tracks; an inner joint part ~~which comprises~~ with a longitudinal axis L13 and ~~attaching means~~ an attachment for a shaft pointing towards the aperture end of the outer joint part, and ~~which is provided with~~ inner ball tracks; the outer ball tracks and the inner ball tracks form pairs of tracks; the pairs of tracks each accommodate a torque transmitting ball[[; each]]. Each two adjoining pairs of tracks ~~comprise~~ have outer ball tracks whose ~~centre~~ center lines are positioned in planes E1, E2 which extend substantially parallel relative to one another, as well as inner ball tracks whose ~~centre~~ center lines are positioned in planes E1', E2' which extend substantially parallel relative to one another[[; an]]. An annular ball cage is positioned between the outer joint part and the inner joint part ~~and comprises~~ with circumferentially distributed cage windows which each accommodate the torque transmitting balls of two of said adjoining pairs of tracks[[; in]]. In an aligned joint, the ~~centres~~ centers K_1, K_2 of the balls are held by the ball cage in the joint ~~centre~~ center plane EM and when the joint is articulated, they are guided onto the angle-bisecting plane between the longitudinal axes L12, L13.

On page 8 of the English language translation of the specification, please add a heading before the first full paragraph to appear as follows:

Background

On page 8 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

Joints of this type are known from ~~DE 44 40 285 C1~~ U.S. Patent No. 5,685,777, for example. In these joints, torque can be transmitted in the torque direction by half the balls only.

On page 8 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

Joints of a similar type are known from ~~DE 100 33 491 A1~~ U.S. Patent No. 7,025,683 wherein the cross-section of the outer ball tracks and of the inner ball tracks is defined by circular arches, with the respective axis of symmetry of the ball track cross-sections being positioned in those planes which contain the track ~~centre~~ center lines. Under torque conditions, depending on the torque transmitting direction, this leads to disadvantageous load conditions at the track edges.

On page 8 of the English language translation of the specification, please add a heading between the second and third full paragraphs to appear as follows:

Summary Of The Invention

On page 8 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

~~It is the object of the~~ The present invention ~~to propose~~ provides joints of said type which, under torque load, comprise the most advantageous load conditions independently of the torque transmitting direction.

On page 8 and continuing on page 9 of the English Language translation of the specification, please amend the fourth full paragraph of the specification to appear as follows:

~~The objective~~ This is achieved by providing joints of said type wherein the track cross-sections of the outer ball tracks and of the inner ball tracks of each pair of tracks are symmetrical relative to axes of symmetry ES_1, ES_2 which, together with the planes E1, E2, E1', E2', form identically sized angles φ_1, φ_2 opening in opposite directions and each comprise a common point M, M'. ~~Herein it is proposed that the~~ The angles φ_1, φ_2 range from 0.8 to 1.3 φ_0, wherein $2\varphi_0$ constitutes the ~~centre~~ center angle in an aligned joint between radial rays RS1, RS2 from the longitudinal axes L12, L13 through the ball ~~centres~~ centers K1, K2 of the balls of two of said adjoining pairs of tracks. The significance of this measure can be explained as follows: If φ_1, φ_2 equal φ_0, then the track cross-sections of the outer ball tracks and of the inner ball tracks of each pair of tracks are symmetrical relative to radial rays RS1, RS2 from the longitudinal axes through the ball ~~centres~~ centers K1, K2 of the torque transmitting balls of the pair of tracks. If φ_1, φ_2 are not equal to φ_0, then the track cross-sections of the outer ball tracks and of the inner ball tracks of each pair of tracks are symmetrical relative to the straight lines PS_1, PS_2 which are positioned in the cross-sectional plane, which are parallel to the radial rays RS1, RS2 and which intersect one another in a common point M' at a distance from the longitudinal axes L12, L13.

On page 9 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

Therefore, in fixed joints whose balls are guided in ball tracks extending in pairs in substantially parallel planes E1, E2, E1', E2' – wherein, in order to increase the load bearing capacity, two balls each are received in a cage window – it is ensured that the introduction of force into the ball tracks is improved and guarantees substantially uniform conditions independently of the torque transmitting direction. This is achieved by the symmetric design of the track cross-sections of each pair of tracks relative to the radial rays RS1, RS2 from the longitudinal axis L12, L13 through the ball ~~centres~~ centers K1, K2 and relative to the straight lines PS1, PS2 which extend parallel to such radial rays. Slight deviations from the strict symmetry relative to the individual radial rays RS1, RS2 are permissible and possibly advantageous, more particularly in those cases where the ball tracks are produced with tools whose movements are to take place on defined planes, with the tool axes preferably being kept parallel relative to one another.

On page 10 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

According to a first basic embodiment, ~~it is proposed that~~ the track ~~centre~~ center lines M22 of the outer ball tracks and the track ~~centre~~ center lines M23 of the inner ball tracks are positioned in planes E1, E2 which extend parallel relative to one another and parallel to the longitudinal axes L12, L13 of the joint and extend through the ball ~~centres~~ centers of the balls of two of said adjoining pairs of tracks.

On page 10 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

~~It is proposed that the~~ The joint ~~is~~ can be provided in the form of a twin ball joint, wherein the opening angles α_1, α_2 between the tangents at the base lines of two of said adjoining pairs of tracks in an aligned joint in the joint ~~centre~~ center plane EM, in each case, open in the same direction, more particularly towards the attaching end of the outer joint part.

On page 10 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

According to a second basic embodiment, ~~it is proposed that~~ the joint ~~is~~ can be provided in the form of a counter track joint, wherein the opening angles α_1, α_2 between the tangents at the base lines of two of said adjoining pairs of tracks in an aligned joint in the joint ~~centre~~ center plane EM open in opposite directions. More particularly, ~~it is proposed that~~ the balls of two of said adjoining pairs of tracks in an aligned joint ~~are~~ can be positioned on different pitch circle radii.

On page 10 and continuing on page 11 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

According to a further basic alternative embodiment ~~it is proposed that~~ the track ~~centre~~ center lines $M22_1$, $M22_2$ of the outer ball tracks extend in planes E1, E2 which extend parallel relative to one another and through the ball ~~centres~~ centers of the balls of two of said adjoining pairs of tracks and which comprise identical perpendicular distances from the joint ~~centre~~ center M, while forming intersection angles γ_0 with parallel lines relative to the longitudinal axes L12, L13 and that track ~~centre~~ center lines $M23_1$, $M23_2$ of the outer ball tracks extend in planes E1', E2' which extend parallel relative to one another and through the ball ~~centres~~ centers of the balls of two of said adjoining pairs of tracks and which comprise identical perpendicular distances from the joint ~~centre~~ center M, while forming intersection angles γ_0' with parallel lines relative to the longitudinal axes L12, L13. The angles γ_0 and γ_0' are identical in size and open in opposite directions, so that there is obtained an intersection angle angles $\gamma_0 + \gamma_0$' between the planes E1, E2 of the outer tracks and the planes E1', E2' of the inner tracks.

On page 11 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

In contrast to the initially mentioned embodiment wherein the spatial control angle at the balls changes slightly as a function of the direction of the introduction of torque, it is possible with the above embodiment to compensate for the dependence of the spatial control angles ε_0, ε_0' at the balls on the torque transmitting direction. More particularly, ~~it is proposed that~~ the intersection angles γ_0 , γ_0' ~~should~~ can be selected to be such that the spatial control angles of the ball tracks are identical in size both in the case of a torque Kr_0 rotating clockwise or a torque Kl_0 rotating anti-clockwise.

On page 11 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

Furthermore, ~~it is proposed that~~ with a ~~centre~~ center angle $2\varphi_0$ between the radial rays RS1, RS2 through the ball ~~centres~~ centers of the balls of two of said adjoining pairs of tracks, the angle of intersection γ_0 is calculated in accordance with the equation $\gamma_0 = \varepsilon_0 \times \tan\varphi_0$ to ensure that the spatial control angles are identical in size regardless of whether the load on the joint rotates to clockwise or anticlockwise.

On page 11 and continuing on page 12 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

If the track ~~centre~~ center lines are positioned in the axis-parallel planes E1, E2, there are obtained different spatial control angles for clockwise and anti-clockwise torque rotations, which is due to the fact that the contact angles δ for torque loads rotating clockwise and anti-clockwise are symmetrical relative to the radial ray RS. The spatial control angles for loads rotating clockwise and anti-clockwise are:

$$Kr_0 = \varepsilon_0 \times \cos(\delta + \varphi)$$
$$Kl_0 = \varepsilon_0 \times \cos(\delta - \varphi_0)$$

Because of the +/- φ_0 influence, they are clearly different.

On page 12 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

According to a first embodiment of the track cross-sections, ~~it is proposed that~~ the track cross-sections of the outer ball tracks and of the inner ball tracks are formed by circular portions whose ~~centres~~ centers of curvature are positioned at a distance from one another on the respective radial ray RS1, RS2 and, respectively, on the straight lines PS1,PS2 extending parallel thereto and whose radius of curvature is greater than the ball radius and which generate contact with the balls in one point only which, in a torque-free condition, is positioned in the track base.

On page 12 of the English language translation of the specification, please add a heading between the second and third full paragraphs to appear as follows:

Brief Description Of The Drawings

On page 12 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

Figure 1 shows an inventive joint having the characteristics in accordance with the invention:

~~a)~~ A) in half a cross-section according to sectional line C-C of Figure ~~1b~~ 1B; and

~~b)~~ B) in an offset longitudinal section according to sectional line B-B of Figure ~~1a~~ 1A.

On page 12 and continuing on page 13 of the English Language translation of the specification, please amend the fourth full paragraph of the specification to appear as follows:

Figure 2 shows an inventive joint in the form of a twin ball joint:

~~a)~~ A) in an axial view; and

~~b)~~ B) in a longitudinal section along the sectional planes A-A, B-B of Figure ~~2a~~ 2A.

On page 13 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

Figure 3 shows an inventive joint in the form of a counter track joint:

~~a)~~ A) in a cross-section through the ~~centre~~ center plane EM;

~~b)~~ B) in a longitudinal section according to the sectional plane A-A in Figure ~~3a~~ 3A; and

~~c)~~ C) in a cross-section according to sectional plane B-B in Figure ~~3a~~ 3A.

On page 13 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

Figure 4 shows an inventive joint in the form of counter track joint in an alternative embodiment:

~~a)~~ A) in a cross-section through the ~~centre~~ center plane EM; and

~~b)~~ B) in a longitudinal section according to the sectional line A-A of Figure ~~4a~~ 4A.

On page 13 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

Figure 5 shows a partial cross-section through an inventive joint in a first embodiment of the ball track cross-section according to sectional line C-C in Figure ~~1b~~ 1B.

On page 13 of the English Language translation of the specification, please amend the fourth full paragraph of the specification to appear as follows:

Figure 6 shows a partial cross-section through an inventive joint in a second embodiment of the ball track cross-section according to sectional line C-C of Figure ~~1b~~ 1B.

On page 13 of the English Language translation of the specification, please amend the fifth full paragraph of the specification to appear as follows:

Figure 7 shows the joint according to Figure 1 in a modified embodiment;

~~a)~~ A) in half a cross-section according to sectional line C-C of Figure ~~7b~~ 7B; and

~~b)~~ B) in an offset longitudinal section according to sectional line B-B of Figure ~~7a~~ 7A.

On page 14 of the English language translation of the specification, please add a heading between the first and second full paragraphs to appear as follows:

Detailed Description

On page 14 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

The two illustrations of Figure 1 will be described jointly below. Figure 1 shows a constant velocity fixed joint 11 which comprises an outer joint part 12, an inner joint part 13, torque transmitting balls 14 and a ball cage 16. Two balls 14_1, 14_2 each are accommodated in a common cage window 17 of the ball cage. The balls are held in outer ball tracks 22_1, 22_2 and inner ball tracks 23_1, 23_2, wherein the ball tracks of adjoining balls 14_1, 14_2 form pairs of tracks 22_1, 23_1, 22_2, 23_2. RS1 and RS2 refer to radial rays from the longitudinal axes L12, L13 through the ~~centres~~ centers K1, K2 of the balls 14_1, 14_2. S1 and S2 refer to the sectional lines of planes E1, E2, E1', E2' in which there are positioned the ~~centre~~ center lines of the ball tracks, with the sectional plane C-C which approximately can be regarded as the cross-sectional plane through the joint. In these planes E1, E2, E1', E2' there are positioned the ~~centre~~ center lines of the ball tracks. These can be provided in the form of planes extending parallel to the longitudinal axes L12, L13 or as planes which form an angle of intersection with the longitudinal axes L12, L13 and are parallel to one another in pairs. The ball tracks extend symmetrically relative to axes of symmetry ES1, ES2 which, together with the radial planes R1, R2, form identically sized angles φ_{01}, φ_{02} opening in opposite directions and which, in the present case, correspond to the radial rays RS1, RS2.

On page 14 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

φ_{01}, φ_{02} is given as half the ~~centre~~ center angle between the radial rays RS1, RS2 through the ~~centres~~ centers of the balls 14_1, 14_2 with reference to the longitudinal axes L12, L13 and, respectively, half the opening angle between the two radial rays RS1, RS2.

On page 15 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

Figure ~~1b~~ 1B, in addition, shows the ball tracks 22_2, 22_3 with the track ~~centre~~ center lines M22, M23, as well as the tangents T22, T23 at the ball track base lines in the plane C-C. Tangents T22', T23' at the track ~~centre~~ center lines M22, M23 extend parallel to said tangents T22, T23 at the track base lines and are positioned in planes which, according to the above, can be positioned parallel to the longitudinal axes L12, L13 or at an angle relative to the longitudinal axes L12, L13.

On page 15 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

The tangents T22', T23' at the track ~~centre~~ center lines M22, M23 form track angles ε_0 with a parallel line L' extending parallel to the longitudinal axes L12, L13, wherein, in the first case, said tangents T22', T23' forming said track angles which are positioned in the drawing plane and, in a special case, are inclined at the angles φ_0, φ_0' relative to the illustration plane.

On page 15 and continuing on page 16 of the English Language translation of the specification, please amend the fourth full paragraph of the specification to appear as follows:

Figures ~~2a and 2b~~ 2A and 2B will be described jointly below. They show an inventive joint in the form of a twin ball joint, with identical details having been given the same reference numbers as in Figure 1. To that extent reference is made to the description of same. It can be seen that the ball tracks 22_1, 23_1 and 222, 23_2 of two adjoining balls 14_1, 14_2 held in a common cage window 17 are designed so as to correspond to one another according to sectional planes A-A and B-B. The identifiable corresponding track extensions apply to all ball tracks of the joint. Joints of this type are referred to by the applicant as twin ball joints. In the scale shown, the details of the track cross-sections cannot be identified.

On page 16 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

The individual illustrations of Figure 3 will be described jointly below. They show an inventive joint in the form of a counter track joint. Identical details have been given the same reference numbers as in Figure 1, and modified features have been indexed by 300. To that extent, reference is made to the description of same. As can be seen with reference to the individual sections, the ball tracks 22_1, 23_1 of first balls 14_1 which, together with second balls 14_2, are held in a common cage window 17 comprise a first opening angle α_1 relative to the joint aperture and the second ball tracks 22_2, 23_2 of said second balls 14_2 which, together with the first balls 14_1, are held in a common cage window, comprise a second opening angle α_2 which opens towards the joint base.

On page 16 and continuing on page 17 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

The illustrations of Figure 4 will be described jointly below. As regards the details shown in Figure 4, reference is made to the description of Figure 1, with the same features given the same reference numerals, and modified features indexed by 400. Figure ~~4a~~ 4A shows a sectional line A-A which extends through two ball ~~centres~~ centers K1, K2 of the balls 14_1, 14_2 of two adjoining pairs of tracks and parallel to the longitudinal axes L12, L13. Figure ~~4b~~ 4B shows that the ~~centre~~ center lines M22 of the outer ball tracks ~~22_1, 22_2~~ 422_1, 422_2 are positioned in planes E1, E2 which, together with the longitudinal axis L12, form an angle γ_0, whereas the ~~centre~~ center lines M23 of the inner ball tracks ~~23_1, 23_2~~ 423_1, 423_2 are positioned in planes which extend parallel relative to one another and which, together with the longitudinal axis L13, form an identically sized angle γ_0' opening in the opposite direction.

On page 17 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

Figure 5, in a cross-sectional view, shows two adjoining pairs of tracks ~~22_1, 23_1; 22_2, 23_2~~ 522_1, 523_1; 522_2, 523_2 of two balls 14_1, 14_2 held in one cage window 17. The cross-sectional shape of the ball tracks is symmetrical relative to the radial rays RS1, RS2 which are identical to the axes of symmetry ES1, ES2 of the track cross-section. The ball ~~centre~~ center lines are positioned in the panes E1 and E2 which extend parallel to the radial planes R1. The cross-sectional shape of each ball track can be parabolic or Gothic (composed of two circular arches with offset ~~centres~~ centers), with two-point contact occurring in each of the ball tracks. Irrespective of the position of the articulated joint, there is ensured an advantageous force application angle of the previously mentioned pairs of force FR, which force application angle does not substantially change during the articulation of the joint, so that the balls cannot move towards the track edges.

On page 17 and continuing on page 18 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

Figure 6, in a cross-sectional view, shows two adjoining pairs of tracks ~~22_1, 23_1; 22_2, 23_2~~ 622_1, 623_1; 622_2, 623_2 of two balls 14_1, 14_2 held in one cage window 17. In this case, too, the ball tracks of the pairs of tracks ~~22_1, 23_1; 22_2, 23_2~~ 622_1, 623_1; 622_2, 623_2 are symmetrical relative to the radial rays RS1, RS2 which are identical to the axes of symmetry ES1, ES2 of the track cross-sections. The ball track ~~centre~~ center lines are positioned in the planes E1, E2 which extend parallel to the radial planes R1. The cross-sections of the ball tracks of each pair of tracks are formed by circular arches whose ~~centres~~ centers M1a, M1i; M2a, M2i are positioned on the respective radial ray RS1, RS2, with the radii Ra, Ri being clearly greater than the ball radius. Torque-free conditions thus result in contact between the balls 14_1, 14_2 and the ball tracks ~~22_1, 23_1; 22_2, 23_2~~ 622_1, 623_1; 622_2, 623_2 in the respective track base.

On page 18 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

The illustrations of Figure 7 will be described jointly below. Identical details have been given the same reference numbers as in Figure 1, and modified features have been indexed by 700. To that extent, reference is made to the preceding description.

On page 18 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

In Figure ~~7a~~ 7A, the pitch circle radius PCR is split in accordance with its two components of PCRx and PCRy with reference to the x-axis perpendicularly relative to the sectional plane B-B and to the y-axis parallel to the sectional plane B-B.

On page 18 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

Figure ~~7b~~ 7B shows the movement of the ball 14_2 when the inner joint part ~~13~~ 713 is articulated relative to the outer joint part 712 towards the left by an angle β, with the ball, with reference to the ~~centre~~ center M, having been displaced by an angle β/2 relative to the outer joint part. There are also shown the pitch circle radii PCRy(0) in an aligned joint and PCRy(β/2) in a joint articulated by the angle β. Because of the way in which the track extends, PCRy(β/2) is greater than PCRy(0).

On page 19 of the English Language translation of the specification, please amend the second full paragraph of the specification to appear as follows:

Depending on the rotational position of the joint 711 as a function of the angle of articulation, the ball is in different positions along the ball track. On condition that the ball tracks are positioned in planes extending parallel relative to one another and parallel to the longitudinal axis L12, L13, PCRx remains unchanged, whereas PCRy can vary. As a result, there occurs a slight change in the angle φ between the ~~centre~~ center plane through the longitudinal axes L12, L13 and the through the y-axis, and the radial ray RS from the joint ~~centre~~ center M through the ball ~~centre~~ center K.

On page 19 of the English Language translation of the specification, please amend the third full paragraph of the specification to appear as follows:

In order to accurately maintain the inventive symmetry of the ball tracks, the ~~centres~~ centers of curvature M1i and M1a and M21 and M2a respectively have to be positioned in planes formed by the radial rays RS1, RS2 and the longitudinal axes L12, L13.

On page 19 and continuing on page 20 of the English Language translation of the specification, please amend the fourth full paragraph of the specification to appear as follows:

Therefore, in accordance with the embodiment shown here, the ~~centres~~ centers M1i and M1a are each positioned in a plane which extends parallel to those planes which contain the track ~~centre~~ center lines. This means that the effective line (axis of symmetry of the track cross-section) will no longer, in every position, extend accurately through the joint ~~centre~~ center M, but through a ~~centre~~ center M'. The deviation *a* between the two planes is relatively small. It is calculated as follows:

$$a = (PCRy(\beta) - PCRy(0)) \times \sin\varphi_0,$$

and the deviation of the plane of symmetry of the ball track cross-section towards the radial ray amounts to

$$\Delta\delta \approx a/PCR[rad.].$$

On page 20 of the English Language translation of the specification, please amend the first full paragraph of the specification to appear as follows:

In Figure 8, any details identical to those shown in Figure 4 have been given the same reference numbers, and the effect of the ball movement on the ball 14_1 when the joint is articulated as illustrated in Figure ~~7a~~ 7A has been taken over. Whereas the ~~centre~~ center lines of the ball tracks always extend in the planes E1, E2, there occurs a displacement of the planes of symmetry of those track cross-sections which are no longer defined by the second radial rays RS1, RS2 intersecting one another in the joint ~~centre~~ center M, but by the axes of symmetry ES_1, ES_2 intersecting one another in the point M' in the radial plane R1. The track ~~centre~~ center $M1_0$ is displaced in the plane E1 into the track ~~centre~~ center M1. A radial ray from the joint ~~centre~~ center M and, respectively from the longitudinal axis through the track ~~centre~~ center deviates from the radial ray RS1 by the angle $\Delta\delta$. The distance between the ~~centres~~ centers M, M' and M_{10}, M_1 is given as $\Delta PCRy$.